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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,970	02/28/2001	Izumi Watanabe	381KKA/49697	4447

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EXAMINER	
PATEL, HARSHAD R	
ART UNIT	**PAPER NUMBER**
2855	

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,970	WATANABE ET AL.	
	Examiner	Art Unit	
	Harshad Patel	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) *7-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following informalities: As described at page 14, line 19, "16H2" is not shown in Fig. 1. As described at page 15, line 4, "12L" is not labeled in any figures. Page 16 into page 17, applicant refers to 40 sensors, however, 40 is referred as a wafer. Page 17, lines 25-27, numeral 15H2, 14H2, and 15H3 should be referred by 15H2B, 14H2B and 15H3B. The examiner has addressed only a few of the discrepancies. Applicant is advised to thoroughly check the entire specification, as there are several more of such discrepancies. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, it refers to first lead conductors connected to both ends of the resistor at lines 2-3. It also refers that second lead conductors are electrically connected to both ends of the resistor. It is confusing as to how the first and second leads are both connected to the resistor. It seems that the second leads are connected to the electrodes.

As to claim 2, it is unclear as to how the physical quantity is measured when a disconnection portion disconnects the second lead connection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada et al. (6,553,829) in view of Watanabe et al. (6,708,560) (hereinafter (Nakada or Watanabe). Nakada teaches a physical quantity detecting device comprising a resistor (13a) formed on a thin-wall portion (12) of a substrate (11) and electrodes (15) respectively connected through first lead conductors (not numbered) to both ends of said resistor and made to detect a physical quantity through the use of said resistor. Nakada further teaches a second resistor (13b) formed on the substrate. Nakada further teaches second lead conductors (50) electrically connected to both ends of said resistor but fails to show the lead conductors to be formed to extend to an outer circumferential end of said substrate. Watanabe teaches second leads (19) formed to extend to the outer circumference of the substrate (fig. 12) and electrically connected to ends of the resistor. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to form the second lead conductors on the substrate as taught by Watanabe for the lead conductors (50) of Nakada since it would prevent accidental removal of the leads as they are individually raised from the substrate. Furthermore, it would also help in making direct connections to a female adaptor. Nakada is silent of the type of material used for the resistors. It is well known in the thermal flow-sensing device that such resistors are formed of platinum or

polysilicon doped with impurities. Watanabe also teaches the use of platinum for the formation of the resistor.

The limitation of claim 2 regarding the disconnect portion has not been given any weight to as the disconnect portion is used during the manufacturing and testing period only. During the time of being applied to be used as sensor, there is no connection of the second lead conductor with the resistor as the disconnect portion has been melted during the testing period. Thus for the measurement period, the connection of the external electronic circuit is made to the electrodes and not to the second leads.

As to the resistors formed of single-crystal silicon doped impurities, it would have been obvious to a skilled individual to form a resistor from a silicon material doped with any impurities since such a formation would be necessary for a electrically conductive material to be formed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harshad Patel whose telephone number is (571) 272-2187. The examiner can normally be reached on Monday-Thursday (7:00 AM-5:30 PM).

Harshad Patel
Primary Examiner
Art Unit 2855

hp
April 12, 2004